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(12) **United States Patent**  
**Padovani et al.**

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(54) **PILOT REFERENCE TRANSMISSION FOR A WIRELESS COMMUNICATION SYSTEM**

USPC ..... 370/252, 278, 329, 503  
See application file for complete search history.

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**ABSTRACT**

A pilot reference transmission scheme well suited for high data rate wireless communication systems is disclosed. To maximize the amount of interference from transmissions from neighboring transmission sources (e.g., access points or base stations) during the pilot interval, and hence minimize the amount of interference from non-transmitting sources during the data intervals, the pilot references are transmitted in bursts at predetermined time intervals, and the pilot bursts from the access points are synchronized. This results in maximum interference contributions from non-transmitting neighboring access points, facilitating reliable estimation of worst case carrier-to-interference (C/I), and further allows the receiving devices (e.g., access terminals) to easily recognize the bursts as pilot reference. In one embodiment, each access point transmits the pilot bursts at or near its maximum transmit power level and no user-specific data is transmitted during the pilot bursts.

**21 Claims, 7 Drawing Sheets**

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**Related U.S. Application Data**

(63) Continuation of application No. 09/702,142, filed on Oct. 30, 2000, now Pat. No. 7,289,473, and a continuation-in-part of application No. 09/575,073, filed on May 19, 2000, now Pat. No. 6,894,994, and a

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(52) **U.S. Cl.**

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(58) **Field of Classification Search**

CPC .. H04W 72/0446; H04W 84/12; H04W 84/18

